

Irrigation Scheduling in Idaho

MARVIN E. JENSEN
Agricultural Research Service
Kimberly, Idaho

ABSTRACT

Scheduling the timing and amount of irrigation water applied has changed very little during the last two decades. Professional irrigation scheduling services are rapidly expanding and many of the companies are using a computer program developed by the USDA. This program uses meteorological, soil and crop data to predict irrigation dates and amounts. Service companies modify the program to fit their needs. Periodic field inspections are provided by trained technicians as part of scheduling service. This paper briefly describes the development of the computer program and the current status of its application in Idaho.

Introduction

In Idaho, as in most irrigated areas in the West, irrigation scheduling had changed very little during the last two decades. In the meantime, there have been significant advancements in irrigation science and technology. Growers stand to gain direct economic returns from better irrigation scheduling by increased yields and in some cases, lower irrigation costs. Irrigation districts whose operating costs are borne by the farm owners and managers regularly encounter unnecessary direct and indirect operating costs that can be attributed to poor irrigation practices.

Irrigation scheduling involves several important components (1) timing, (2) the amount of water applied, (3) the flexibility of the system, and (4) the ability of farm management to respond to irrigation needs. But why has there been little improvement in irrigation scheduling? Probably the most obvious reason why the amount of irrigation water has not been controlled more precisely is that water measurement is not common on most of the older irrigated areas. Water measurement on each field is not a simple task with surface irrigation. The amount of water delivered to the farm can be measured with relative ease, but losses as seepage in the distribution system, deep percolation near the upper ends of the field, and surface runoff are generally not known to the farm manager. Also, the farm manager is not interested in measuring the amount of water applied if there is no obvious direct economic benefit. He is not interested in expending additional funds, time, and often being inconvenienced measuring water just to collect data. Low cost water, obsolete irrigation systems and high labor costs are also important factors that have contributed to lack of change in irrigation scheduling practices.

Large quantities of data are available that show significant reductions in crop yield or quality if irrigations are delayed, but few data show the economic losses that occur as a result of excessive water applications. The natural tendency under these circumstances is to apply